Small Business Innovation Research/Small Business Tech Transfer

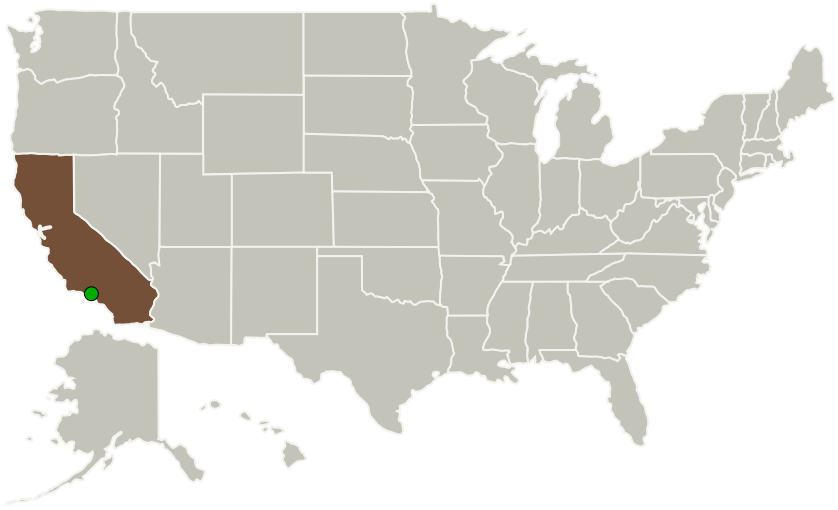
Digitally Intensive DC-DC Converter for Extreme Space Environments, Phase II

Completed Technology Project (2013 - 2016)

Project Introduction

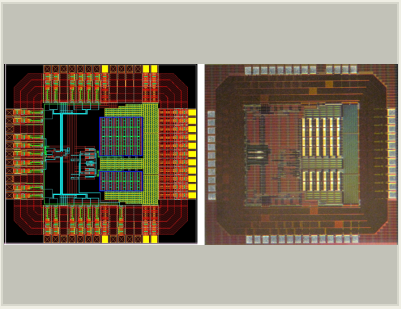
The Space Micro-Arizona State University (ASU) team will develop an all-digitally controlled, wide temperature range point-of-load switch-mode DC-DC regulator core with built-in self-test (BIST) functionality which meets space radiation requirements. In Phase II we will complete a design and fabricate into silicon at Tower-Jazz foundry and demonstrate the electrical, thermal, and radiation performance to meet NASA mission needs. This R&D translates into substantial benefits to NASA in extreme temperature (and radiation) environments.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Space Micro, Inc.	Lead Organization	Industry	San Diego, California
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations
California



Digitally intensive DC-DC converter for extreme space environments Project Image

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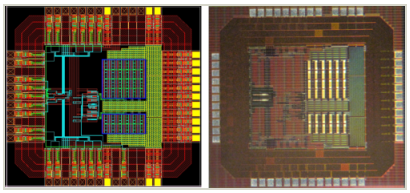
Completed Technology Project (2013 - 2016)

Project Transitions

July 2013: Project Start

January 2016: Closed out

Images



Project Image
Digitally intensive DC-DC converter for extreme space environments Project Image
(https://techport.nasa.gov/image/129354)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Space Micro, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Bert R Vermeire

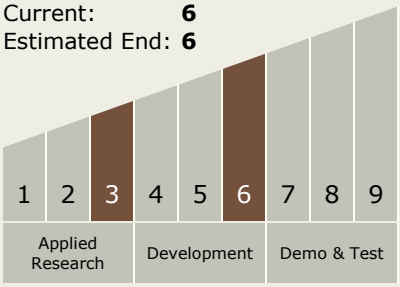
Co-Investigator:
Bert Vermeire

Digitally Intensive DC-DC Converter for Extreme Space Environments, Phase II

Completed Technology Project (2013 - 2016)

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX02 Flight Computing and Avionics
  - TX02.1 Avionics Component Technologies
    - TX02.1.7 Point-of-Load Power Converters

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System